

1642

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: ARATHOON ET AL. Examiner: A. HOLLERAN
Serial No.: 09/373,403 Group Art Unit: 1642
Filed: AUGUST 12, 1999 Docket: 11669.133USC1
Confirmation No.: 2534 Customer No.: 23552
Title: A METHOD FOR MAKING MULTISPECIFIC ANTIBODIES HAVING
HETEROMULTIMERIC AND COMMON COMPONENTS

CERTIFICATE UNDER 37 CFR 1.8:

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on October 1, 2003.

By: 

Name: Sheryl A. Boerboom

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

We are transmitting herewith the attached:

- ☒ Transmittal Sheet in duplicate containing Certificate of Mailing
- ☒ Supplemental Information Disclosure Statement, Form 1449, 27 References
- ☒ Return postcard

Please consider this a PETITION FOR EXTENSION OF TIME for a sufficient number of months to enter these papers or any future reply, if appropriate. Please charge any additional fees or credit overpayment to Deposit Account No. 13-2725. A duplicate of this sheet is enclosed.

MERCHANT & GOULD P.C.
P.O. Box 2903, Minneapolis, MN 55402-0903
612.332.5300

By: 

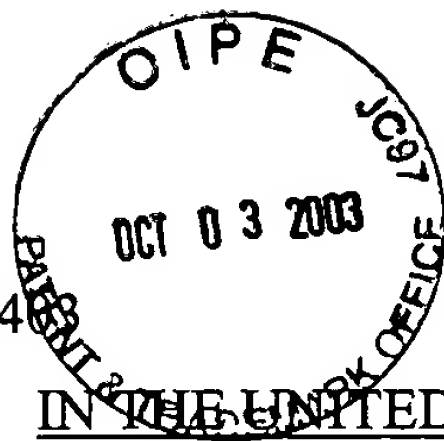
Name: Katherine M. Kowalchyk

Reg. No.: 36,848

KKowalchyk:sab

S/N 09/373,403

PATENT

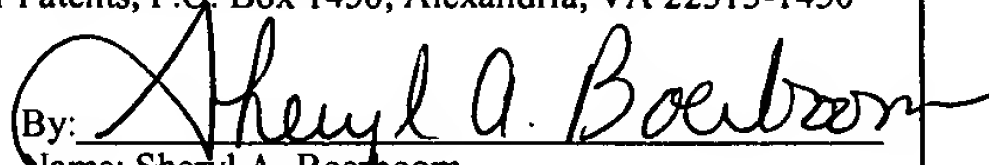


IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	ARATHOON ET AL.	Examiner:	A. HOLLERAN
Serial No.:	09/373,403	Group Art Unit:	1642
Filed:	AUGUST 12, 1999	Docket No.:	11669.133USC1
Confirmation No.:	2534	Customer No.	23552
Title:	A METHOD FOR MAKING MULTISPECIFIC ANTIBODIES HAVING HETEROMULTIMERIC AND COMMON COMPONENTS		

CERTIFICATE UNDER 37 CFR 1.8:

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on October 1, 2003.

By: 
Name: Sheryl A. Boerboom

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT (37 C.F.R. § 1.97(c))

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

With regard to the above-identified application, the items of information listed on the enclosed Form 1449 are brought to the attention of the Examiner.

This statement should be considered because it is submitted before the mailing of a first Office Action after the filing of a Request for Continued Examination under 37 C.F.R. § 1.114 or a CPA under 37 C.F.R. § 1.53(d). Accordingly, no fee is due for consideration of the items listed on the enclosed Form 1449.

The Examiner's attention is directed to co-pending applications U.S. Serial No. 09/520,130 filed March 7, 2000, U.S. Serial No. 09/863,693 filed May 23, 2001, and U.S. Serial No. 10/143,437 filed May 10, 2002.

In accordance with 37 C.F.R. §1.98(a)(2), a copy of each document or other information listed on the enclosed Form 1449 is provided.

No representation is made that a reference is "prior art" within the meaning of 35 U.S.C. §§ 102 and 103 and Applicants reserve the right, pursuant to 37 C.F.R. § 1.131 or otherwise, to establish that the reference(s) are not "prior art." Moreover, Applicants do not represent that a

reference has been thoroughly reviewed or that any relevance of any portion of a reference is intended.

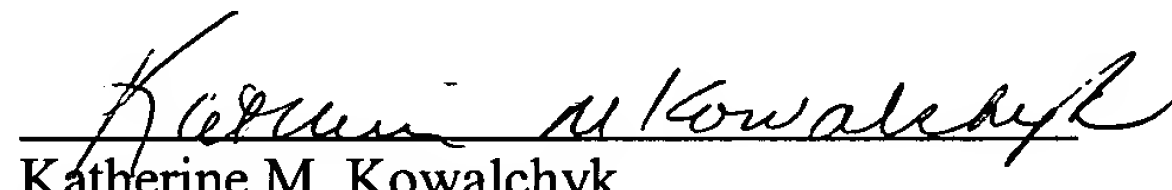
Consideration of the items listed is respectfully requested. Pursuant to the provisions of M.P.E.P. 609, it is requested that the Examiner return a copy of the attached Form 1449, marked as being considered and initialed by the Examiner, to the undersigned with the next official communication.


Please charge any additional fees or credit any overpayment to Deposit Account No. 13-2725.

Respectfully submitted,

MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, Minnesota 55402-0903
(612) 332-5300

Date: Oct. 1, 2003


Katherine M. Kowalchyk
Reg. No. 36,848
KMK:sab

FORM 1449* INFORMATION DISCLOSURE STATEMENT  IN AN APPLICATION (Use several sheets if necessary)	Docket Number: 11669.133USC1	Application Number: 09/373,403
	Applicant: ARATHOON ET AL.	
	Filing Date: AUGUST 12, 1999	Group Art Unit: 1642
	Customer No. 23552	

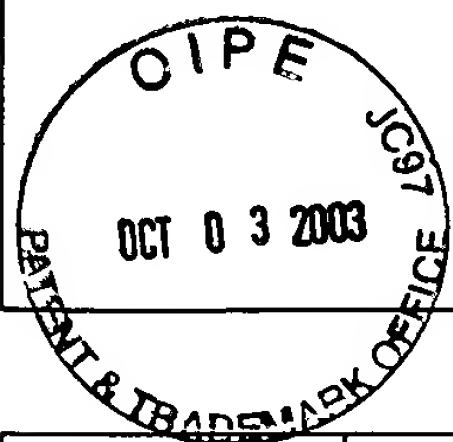
U.S. PATENT DOCUMENTS						
EXAMINER INITIAL	DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	5,807,706	09/15/1998	CARTER ET AL.			
	5,821,333	10/13/1998	CARTER ET AL.			

FOREIGN PATENT DOCUMENTS							
	DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)		
		Bedzyk et al., "Active Site Structure and Antigen Binding Properties of Idiotypically Cross-reactive Anti-fluorescein Monoclonal Antibodies", <u>The Journal of Biological Chemistry</u> , 265(1):133-138 (1990)
		Bryunck, A. et al., "Characterisation of a humanized bispecific monoclonal antibody for cancer therapy", <u>Br. J. Cancer</u> , 67:436-440 (1993)
		Carter, P. et al., "Toward The Production of Bispecific Antibody Fragments for Clinical Applications", <u>J. Hematotherapy</u> , 4(5):463-470 (Oct. 1995)
		Carter, P. et al., "Engineering antibodies for imaging and therapy", <u>Curr. Opin. Biotechnology</u> , 8(4):449-454 (Aug. 1997)
		De Jonge, J. et al., "Production and Characterization of Bispecific Single-Chain Antibody Fragments", <u>Mol. Immunol.</u> , 32(17-18):1405-1412 (Dec. 1995)
		Goddard et al., NCBI Genbank AF048774 (1998)
		Goddard et al., NCBI Genbank AF048775 (1998)
		Gulliver, G. et al., "Conversion of an Anti-single-stranded DNA Active Site to an Anti-fluorescein Active Site through Heavy Chain Complementarity Determining Region Transplantation", <u>The Journal of Biological Chemistry</u> , 269(11):7934-7940 (1994)
		Gulliver, G. et al., "Effect of Transplantation of Antibody Heavy Chain Complementarity Determining Regions on Ligand Binding", <u>The Journal of Biological Chemistry</u> , 269(39):24040-24045 (Sept. 30, 1994)
		Kriangkum, J. et al., "Bispecific and bifunctional single chain recombinant antibodies", <u>Biomolecular Engineering</u> , 18(1):31-40 (Aug. 2001)

EXAMINER	DATE CONSIDERED
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form for next communication to the Applicant.	

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		Mallender, W. et al., "Comparative Properties of the Single Chain Antibody and Fv Derivatives of mAb 4-4-20", <u>The Journal of Biological Chemistry</u> , 271(10):5338-5346 (March 8, 1996)
		Mallender, W. et al., "Construction, Expression, and Activity of a Bivalent Bispecific Single-chain Antibody", <u>The Journal of Biological Chemistry</u> , 269(1):199-206 (Jan. 7, 1994)
		Massino et al., "Quantitative analysis of the products of IgG chain recombination in hybrid hybridomas based on affinity chromatography and radioimmunoassay", <u>Journal of Immunological Methods</u> , 201:57-66 (1997)
		Merchant et al., "An efficient route to human bispecific IgG", <u>Nature Biotechnology</u> , 16:677-681 (July 1998)
		Muller, KM et al., "The first constant domain (C _H 1 and C _L) of an antibody used as heterodimerization domain for bispecific miniantibodies", <u>FEBS Letter</u> , 422(2):259-264 (January 30, 1998)
		Muller, KM et al., "A dimeric bispecific miniantibody combines two specificities with avidity", <u>FEBS Letter</u> , 432(1-2):45-49 (July 31, 1998)
		Pluckthun, A. et al., "New protein engineering approaches to multivalent and bispecific antibody fragments", <u>Immunotechnology</u> , 3(2):83-105 (June 1997)
		Reddy, V. et al., "Production of Hybrids Secreting Bispecific Antibodies Recognising CEA and Doxorubicin", <u>Anticancer Research</u> , 13:2077-2084 (1993)
		Rudikoff, S., "Single amino acid substitution altering antigen-binding specificity", <u>Immunology</u> , 79:1979-1983 (1982)
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		Smith et al., "Variable Region Primary Structures of Monoclonal Anti-DNA Autoantibodies from NZB/NZW F ₁ Mice", <u>Molecular Immunology</u> , 27(5):463-470 (1990)
		Tomlinson, IM et al., "The structural repertoire of the human V _K domain", <u>EMBO Journal</u> , 14(18):4628-4638 (Sept. 15, 1995)
		Tomlinson, I. et al., "Methods for Generating Multivalent and Bispecific Antibody Fragments", <u>Methods Enzymol.</u> , 326:461-479 (2000)
		Tso, JY et al., "Preparation of a Bispecific F(ab') ₂ Targeted to the Human IL-2 Receptor", <u>J. Hematotherapy</u> , 4(5):389-394 (Oct. 1995)
		Vuillez, J. et al., "Two-Step Immunoscintigraphy for Non-Small-Cell Lung Cancer Staging Using a Bispecific Anti-CEA/Anti-Indium-DTPA Antibody and an Indium-111-Labeled DTPA Dimer", <u>The Journal of Nuclear Medicine</u> , 38(4):507-511 (April 1997)

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